

CLAIMS:

1. A writable optical record carrier comprising a substrate carrying a recording stack which recording stack comprises, in this order,
 - a recording layer and
 - formed on said recording layer opposite the substrate a first absorption layer,5 the recording layer being essentially transparent in its initial (unrecorded) state for an incident beam of electromagnetic radiation at a predetermined wavelength, and comprising material which changes its optical characteristics when it is heated, the first absorption layer comprising material which has an absorption coefficient being sufficiently high at the predetermined wavelength to convert the incident beam to heat and 10 thereby changing the optical characteristics of said recording layer material.
2. A record carrier according to claim 1, characterized in that said recording layer comprises organic dye material.
- 15 3. A record carrier according to claim 1 or 2, characterized in that said recording stack further comprises a second absorption layer located on the opposite side of said first absorption layer between said recording layer and said substrate.
4. A record carrier according to any of claims 1 to 3, characterized in that said 20 first and second absorption layer material is a material with low thermal conductivity.
5. A record carrier according to claim 4, characterized in that said first and second absorption layer material is ZnS-SiO₂.
- 25 6. A record carrier according to any of claims 1 to 5, characterized in that said recording stack further comprises one or more additional layers adjacent to said first and/or second absorption layers in order to enhance the optical and thermal properties of the record carrier.

7. A record carrier according to any of claims 1 to 6, characterized in that said record carrier further comprises a cover layer attached to said recording stack located on the opposite side of said substrate.

5 8. A method for writing information on a writable optical record carrier, the record carrier comprising a substrate carrying a recording stack which recording stack comprises, in this order,

- a recording layer being essentially transparent in its initial (unrecorded) state for an incident beam of electromagnetic radiation at a predetermined wavelength and
- 10 comprising material which changes its optical characteristics when it is heated, and
- formed on said recording layer opposite the substrate a first absorption layer, in which method marks representing the information are written via a beam of electromagnetic radiation at a predetermined wavelength, the method comprising the following steps
- 15 - positioning a writing unit at a predetermined position with respect to said record carrier,
- generating said beam with a predetermined writing power by means of the writing unit,
- 20 transmitting said beam through said recording layer without changing the optical characteristics of said recording layer material
- at least partially absorbing said beam in the first absorption layer, thereby producing a first spot of heat,
- conducting the heat produced in the first absorption layer towards the recording layer, and
- 25 - locally changing the optical characteristics of said recording layer material by means of the heat conducted from the heat spot in the first absorption layer.

9. A method according to claim 8, characterized in that

- a second heat spot is produced by at least partially absorbing said beam in a
- 30 second absorption layer located on the opposite side of said first absorption layer between said the recording layer and said substrate,
- the heat produced in the second absorption layer is conducted towards the recording layer, and in that

the optical characteristics of the recording layer material are locally changed by means of the heat conducted from the heat spot in the first and the second absorption layers.

- 5 10. A method according to any of the claims 8 or 9, characterized in that the writing power of said beam is varied while writing information on said optical record carrier so that marks are written with different size and/or depth.
- 10 11. A method according to any of claims 8 to 10, characterized in that the writing power of said beam is varied for compensating heating up of the record carrier while writing information on said optical record carrier.